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# THE ESTABLISHMENT OF A STATISTICAL DATA BASE ON MIGRATION

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## I. INTRODUCTION

1. Migrations modify regional rates of population growth and alter the regional distribution of the country's population. Indeed, the movement of population is a topic of direct interest for policy, planning and programming purposes because of its interaction with other demographic forces and its effects upon the socio-economic development. Given the importance of the subject, an assessment of the quantitative aspects of migration in African and hence, the establishment of a statistical data base on internal and international migrations is desirable.

## II. CONCEPTS, DEFINITIONS AND CLASSIFICATION

2. Several problems, dealing most particularly with concepts, definitions and classification affect data collection on migration in Africa.

3. For several years attempts have been made by various international organizations to improve the international comparability of international migrations statistics culminating in the 1953 United Nations recommendations. However, a mid 1970 United Nations study of national practices showed that a variety of definitions of concepts and definitions exist, widely different from those contained in the 1953 recommendation. Against this unsatisfactory position of international migration statistics, the 1953 recommendations were revised in 1980. The main results of the 1980 recommendations (United Nations, 1980) are summarized below.

4. The concept of migration envisages only the type of mobility that involves a move of some minimum specified distance from the place of usual residence and a taking-up of life in a new or different place. Thus time and space (or distance) are central to the definition of migration. This restriction on the concept eliminates certain types of spatial mobility that are commonly referred to as "migration", but that, for the sake of scientific precision, should be listed under different categories. These types include nomadism, the movement of population groups that have no fixed place of residence, and the seasonal movements of persons who live in two or more places during the course of a year.

5. An International migration is a change in usual residence involving movement across an international boundary. An Internal migration is a change in usual residence involving movement across administrative and political boundary within a country.

6. A migrant is a person who has changed his usual place of residence at least once during the migration interval. For a given migration interval, the number of migrants is rarely as large as the number of migrations. A life time migrant is a person whose area of residence at the census on survey date differs from his area of birth.

7. Migration involves simultaneously two localities. The area from which a move is made is the area of Origin or departure; the area in which a move terminates is the area of destination or arrival. An immigrant is an international migrant who enters another country; an emigrant is an international migrant who leaves another country.

8. The criteria whether or not the object of the journey is to take up an occupation is used partly to distinguish short-term immigrants from tourists. The 1980 recommendations of the United Nations Statistical Office opted for the use of the criteria actual length of stay or absence for classification of immigrants and emigrants. The standard period of one year was suggested for distinguishing short-term (less than one year) from long-term (more than one year) immigrants and emigrants.

9. Residence is defined as a continuous stay in the country of departure for a period of one year or more. Non-residence is defined as a continuous stay among from a country of arrival for a period of more than one year by persons who had never lived there or absence from a country of arrival for a period of more than one year after the last stay of more than one year. Visitor to a country from abroad are defined as persons visiting a country from abroad who have stayed or intend to stay for a period of not more than a year in the country. Additionally such persons should not be residents of or long-term immigrants to the country nor should they be short-term immigrants or belong to other categories of arrivals such as nomads and refugees. Two classes of visitors could be identified: tourists (defined as visitors that stay at least one night) and excursionists are visitors who unlike tourists do not have to stay at least one night in accommodations in the country, but can stay for more than one day, retiring to their ships to sleep.

10. Inter-regional migration refers to movements between administrative/political sub-divisions of a country. A Commuter works in city but returns to village each evening; it can occur regularly or spasmodically. A seasonal or shuttle migrant searches for work to augment meager agricultural incomes. A short term sojourner comes to city for limited period (though longer than a season) to accomplish a specific purpose (e.g. to reach a particular education level). A stage migrant moves to the city at

one or more specific stages of his life cycle. Working life migrants are migrants who spend their entire working lives in the city but intend, and eventually do, retire to their home village. A permanent migrant is committed totally to exchanging a rural for an urban way of life. An undecided migrant has no clear intentions either to stay in the city, or to return to the village.

11. The complexities connected with these concepts and definitions in practice render migration measurement, data collection and comparisons difficult.

III. DATA COLLECTION

12. The principal sources of data on both internal and international migrations are population censuses and demographic sample surveys. Other sources are administrative records and population registers.

13. The internal migration data from censuses and surveys are of two types, the 1st type are data obtained through direct questions on related topics and data derived indirectly from census questionnaires not necessarily collected for the purposes of measuring internal migration. The 2nd type come from net internal migration estimates derived from the difference in the population counts in two censuses.

14. The four types of direct questions most often used to derive information on migration censuses are: place of birth, place of last residence, duration of residence in the place of enumeration and residence on a specific date before the census. Information derived from surrogate measures such as age and sex distributions is predicated on the assumption that the movement is selective with respect to these variables. Thus, area variations of these variables enable conclusions to be made on rates of mobility, subject to some reservations: age and sex distributions also depend on other components of population change such as fertility and mortality. The part attributable to migration after taking into account natural increases is difficult to evaluate in most African countries because birth and death rates are not known with certainty.

15. The indirect methods of internal migration estimation have been classified into two broad types by shyrock and associated (in the methods and materials of demography) as:

(a) National Growth Rate method
(b) Residual method comprising the vital statistics method and the Survival ratio method.

The full discussion on the methods of measuring internal migration has been done under the agenda item 7 and also can be found in the

document ECA, Statistical Information bulletin for Africa, n° 15.

16. The sources of international migration data are the same as those of internal migration. The administrative records are sources for the direct measurement of international migration and include entry/departure cards or forms completed at international borders, residence/work permits issued to aliens, general population registers and registers of aliens. Frontier control data are generally the most important source of international migration statistics, but in many African countries the frontier control records are too deficient to provide satisfactory indications. Thus population censuses and/or sample surveys are the major sources of the available statistics on the stock and characteristics of international migration.

17. There are differences between international migration data obtained in census or survey and the data compiled from frontier control records:

- Frontier control records provide the total of arrivals and departures on a continuing basis.
- Census or survey data do not provide the total volume of immigration since they do not include those who died or returned to their countries of origin or places of previous residence before the census reference period, nor do they provide information on emigration.
- Census and survey data, unlike the administrative records, are useful for migration analysis involving the study of the changes in the socio-economic characteristics of migrants and their geographic distribution within a country.

18. Census data on international migration are obtained on the basis of census questions on place of birth, nationality or country of citizenship, place of last previous residence or residence at a specified past period and duration of residence or year of immigration.

19. The major difference between the use of census or survey as source of data on international migration is that a census can provide data for small areas but it is not a suitable source for detailed information such as reasons for migration. On the other hand though a national sample survey cannot provide small areas statistics, it offers a suitable means for in-depth study of international migration.

20. The collection of data on both internal and international migration in Africa is seriously affected by the non uniformity on concepts, definitions and classification. Because these data are often based on different definitions and collection systems, it

is difficult and sometimes impossible to compare data on migrant flows between pair of countries.

## IV. ISSUES ON MIGRATION STATISTICS

21. Within the framework of even a restricted concept of migration as given earlier, there are a number of subsidiary conceptual and procedural problems because one cannot give each term a wholly precise meaning; on the other hand, a lot of compromises have to be made between the ideal and the feasible in the real world of empirical research. The above definition for migration indicates that short moves - from one apartment to another in the same building or in the same lawn - are not considered. Only moves of some reasonable minimum distance should qualify as migrations. Although the tabulation of moves by distance covered is obtainable with exact information on points of origin and points of destination, it is a difficult and laborious process to produce this kind of detail. Operationally, a migration is often defined as a change of residence from one civil division to another; then, given that civil divisions of the same class vary widely in size, shape and length of border, it is clear that this criteria for identifying migrants lack uniformity.

22. Persons who move during a migration interval and died should, strictly peaking, be counted as migrants and their moves should be counted as migrations. However, since information on migration is usually obtained after the end of the interval and from persons still living at that time, both the number and the moves of migrants who died in the interim are likely to be excluded.

23. In applying the definition of international migration given above in some African countries, difficulties arise because a large number of boundaries were demarcated during the colonial period without regard to whether or not they divide ethnic groups. Many types of mobility from rural to urban involve the crossing of international boundaries without reference to them. Also, because of the extensive lengths of the boundaries, most not protected by natural terrains, and because of the frequency of the movements, it has not proved feasible to record all movements across them.

24. In international migrations, data based on the intended or actual length of stay or absence enables classification, but in many cases, intention do not materialize and stated intentions about length of stay are not recorded, do not always coincide with actual length of stay.

25. The question on birthplace is the source mostly used by African countries to gather information on migration and for classifying birth-places as rural or urban, and people as migrant

or non-migrant. Regarding international migrations, this method gives poor information because foreigners by fear of being excluded from the country or denied some opportunities, give false responses.

26. Censuses, administrative records, population regional and sample surveys are the main source of information on migration. The statistics and collection system which make it difficult, if not impossible, to compare data of different countries or sources.

27. Rural to urban movements is a type of migration of great interest. Here, the classification of origin and destination as rural/urban presents some definition problems. One time of classification scheme frequently used is a population size threshold. Since over time localities change status by natural increase or other reasons, reclassification analyses involving more than one time period cannot usually keep abreast of these changes. Also, if respondents are asked to classify their origin localities as rural or urban, the answers will be affected by memory lapse on the part of those who have not kept pace with changes of various localities; misrepresentations of rural places as urban is also possible.

28. The emigration of skilled workers (the so called "brain drain" phenomenon) is a significant resource transfer for a developing country. The issue is very important, not only because of its demographic significance as such, but mostly for its economic and political character. It removes needed skills and takes away productive adults whose childhood or training has been paid for by the country of origin. At the current time the issue is quiet complex and occurs not only from developing to developed countries, but also between developing countries and even from developed to developing countries.

29. The migration phenomenon plays a big role in the socio-economic development and great care should be exercised in its study and its analysis to enable planners and policy makers in constructing sound programmes. Empirical evidence throws light on a big number of issues; for instance, the conventional assumption that most rural out-migration is propelled by poverty and lack of education, health and other facilities, and hence that better rural opportunities and living standards should reduce the exodus proved wrong; a small taste of modernization creates a demand for more.

30. Migration has positive and negative aspects and must be carefully studied before it is used for policy development and programme formulation.

## V. UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA STATISTICAL DATA BASE

### 1. Objectives

31. The economic commission for Africa Statistics Division in collaboration with substantive divisions of the organization has established an integrated statistical data base containing social demographic and economic data. This data base is an information system where statistical data are compiled, processed and disseminated. The main objectives of the data base are:

1. To compile statistical data in a computerized form.
2. To provide ECA statisticians, economists, and demographers with direct and speedy access of African statistical data and to provide them with data processing and analysis services.
3. To automate the publications of ECA's statistical information.
4. To disseminate comprehensive and up-to-date statistical information to users including data collected from various international data banks.
5. To provide assistance services to member countries who plan to set up statistical data banks.
6. To give users other types of services which are required from the system.

### 2. Organization

32. The ECA statistical data base is organized in three levels of data bases integrated into one system of information. The level I data base is a country profile which produces a snap shot view of the socio-economic condition of any one African country or region. Level II contains the bulk of detailed statistical data using standardized international classifications, concepts, and definitions. The data being voluminous, is kept off-line on magnetic tapes and is used on demand or as input to update levels I and III. The level III data base contains selected time series data for on-line application which is capable of answering the most frequently sought data.

### 3. Implementation

33. The implementation of level I depends on levels II and III. To date this data base is not implemented. For level II, foreign trade statistics and national accounts data are operational. The foreign trade data using the Standard International Trade

Classification, contains over 20 million entries on magnetic tapes. There are over 25,000 national accounts data including sectoral deflators.

34. The level III data base is time series containing data values for up to 26 years from 1965 to 1990 for a given statistical series. The data contained are for aggregates and selected items which are frequently sought by users. The "African Statistical Yearbook", "African Socio-economic Indicators", "Foreign Trade Statistics for Africa: Summary Tables Series C", "Foreign Trade Statistics for Africa: Direction of Trade Series A", the Statistical tables for the "Survey of Economic and Social Conditions in Africa" and various country tables are produced from the level III data base.

35. To date the level III data base contains over 151,000 time series data on trade, national accounts, agriculture, industry price, population, health, educarion, labour, finance, transport and communication and vital statistics. Each data is identified by statistical series identifier. Depending on the type of statistics, other parameters are also used to uniquely identify the data series. These are the mode of observation, the reporting country, the partner country, and the base year. The mode of observation is used to give more description or the characteristics of the series as each statistical series could be observed differently. Each statistical data is flagged by a footnote to indicate in broader terms the source and type of data as official national data, estimates by the reporting country, provisional data, etc.

36. The bulk of statistical data is contained in one detail data file and more description of the pertinent data fields, series identifier, mode of observation, the reporting country, partner country and the unit of observation are contained in the other data files. The detail statistical data set is linked to these master data files via the series identifier, mode of observation, reporting country, partner country and the unit of observation codes or variables. These fields are also used to identify data entries in the different data sets.

37. The level III data base is built and maintained using Image 3000 data base management system a product of Hewlett-Packard and custom written programs. Image 3000 is used to define, create, access and maintain the data base.

38. Custom written programs, are developed to fill the gap between the requirements of the statistical data base and the features available with Image 3000 data base management system.

These programs are used for:

1. On-line and batch data entry and update.
2. Table generation.
3. Storage and retrieval of data.
4. Calculation of growth rates, and
5. Data base maintenance and regular up date of derived data.

## VI. ESTABLISHING A STATISTICAL DATA BASE ON MIGRATION

### 1. Objectives

39. The most fundamental goal in developing a migration statistics data base in a country or region is to supply policy makers, programme planners and researchers with statistics on internal and international migrations. The data base should be used in an integrated manner to explain the outcome of the economic and social policies at all desired levels.

### 2. Organization

40. The migration statistics data base is an information system where users are able to enter data which could be retrieved at will and obtain information in respect of users demand. The data base will have a system of classification for migration statistics according to international classification of migration, concepts and definitions. The system of classification proposed for the data base is shown in Annex I. This classification can be fully developed for each African country.

41. In general the main classifications for migration statistics are: -

1. Internal migration
   - Inter-Urban migration (Rural and Urban migration)
   - Net migration per specific area
   - No. of migrants by sex and age
   - No. of migrants by kind of economic activity
   - No. of migrants by reason for leaving (cause of migration
   - No. of in and out migrants by sex and age

2. International migration.

   A) Total No. of immigrants
      - No. of immigrants by sex and age
      - No. of immigrants by kind of economic activity
      - No. of immigrants by reasons for leaving (cause of migration)

B) Total No. of emigrants.
- No. of emigrants by sex and age
- No. of emigrants by kind of economic activity
- No. of economiccaly active emigrants by sex

3. Total financing of migration.

42. The migration statistics data base will contain country data according to standard logical record structure maintraining the international classification system, concepts and definitions. Similar to the organization of the Economic Commission for Africa Statistical Data Base, this data base could be organized in different data files. The detail numerical data could be time series data built in one data file. Each logical record contains the variables for :-

- The migration statistics classification code
- Additional information on how the series is defined such as sex, growth rate etc. (the mode of observation)
- The country or region of the origin of the migrant
- The country or region of destination of the migrant
- The unit of measurement
- A series of numerical data value along with some descriptors to identify if the data is actual official, provisional, estimated, projected etc.

43. In addition to these variables other variables such as the year or range of years for which the data is recorded, the date of update, the base year if applicable, etc are also included.

44. The other data files will contain the most relevant variables along with their full text description in both English and French. These files give the description of

- The Statistical series
- The mode of observation
- The reporting country or region or the origin of the migrant
- The destination country or region of the migrant whenever applicable and
- The units of measurement used.

45. These files are hierarchically connected to the numerical data file using the same variables. This type of hierarchial organization will conserve storage space and enable fast retrieval of data. The variables used in these data files are used as search items to retrieve the numerical data. These files also give the necessary full description of the statistics.

## VII. CONCLUSION

46. The establishment of statistical data base on migration statistics is vital for the proper analysis, dissemination and monitoring of the population movements of a country. It will readily make available the data for policy formulation, planning and programming purposes. This data base could be integrated with other statistical data bases to give an indication of the socio-economic conditions of a country or region. The statistical data base on migration statistics can also be used to indicate the impact of population movement on the economic development.

ANNEX I

Statistical series classification for migration statistics

A) Internal migration

1. Prevalence of rural and urban population mobility
   Total No. of rural to urban migrants
      No. of commuter
      No. of seasonal migrants
      No. of permanent migrants
      No. of undecided and other migrants

   Total No. of rural to rural migrants
   Total No. of urban to rural migrants
   Total No. of urban to urban migrants
   Total No. of inter-regional migrants

2. Relative importance of rural & urban population mobility (rates of all the quantities in 1 with respect to a carefully selected base).

3. Net migration per specific area for a given period

4. Rate of migration per specific area for a given period
   . Annual growth rate of urban population
      . As % of total population
   . Annual growth rate of rural population
      . As % of total population

5. No. of migrants by social and professional category
   No. of migrants by sex
   . Female
   . Male
   . Both sex

   No. of migrants by age group
   . Age less than 15 years
   . Age 15 to 24 years
   . Age 25 to 34 years
   . Age 35 to 44 years
   . Age 45 to 54 years
   . Age 55 to 64 years
   . 65 years and over

   No. of Immigrants by kind of economic activity.
   . Agriculture
   . commerce
   . industry

No. of migrants by reasons for leaving (cause of migration)
- . Agriculture
- . Employment (Labour)
- . Education
- . Health problems (of oneself or relatives)
- . Marriage
- . Other reasons

No. of out-migrants by sex
- . Female
- . Male
- . Both sex

No. of out-migrants by age group
- . Age less than 15 years
- . Age 15 to 24 years
- . Age 25 to 34 years
- . Age 35 to 44 years
- . Age 45 to 54 years
- . Age 55 to 64 years
- . 65 years and over

No. of In-migrants by sex
- . Female
- . Male
- . Both sex

No. of in-migrants by age group
- . Age less than 15 years
- . Age 15 to 24 years
- . Age 25 to 34 years
- . Age 35 to 44 years
- . Age 45 to 54 years
- . Age 55 to 64 years
- . 65 years and over

B) International migration per African country

1. Total foreign population
   Total No. of Immigrants.
   Total No. of Immigrants by sex.
   - . Female
   - . Male
   - . Both sex

Total No. of Immigrants by age,
- . Age less than 15 years
- . Age 15 to 24 years
- . Age 25 to 34 years
- . Age 35 to 44 years
- . Age 45 to 54 years
- . Age 55 to 64 years
- . 65 years and over

Total No. of Immigrants by kind of economic activity,
- . Agriculture
- . commerce
- . industry

No. of immigrants by country of nationality
No. of immigrants by sex and by country of nationality
- . Female
- . Male
- . Both sex

Total No. of immigrant workers by age group,
- . Age less than 15 years
- . Age 15 to 24 years
- . Age 25 to 34 years
- . Age 35 to 44 years
- . Age 45 to 54 years
- . Age 55 to 64 years
- . 65 years and over

Total No. of visitors from abroad
- . No. of tourists
- . No. of excursionists
- . others

Total No. of immigrant refugees
Total No. of persons in transit
Total No. of immigrant nomads and others

2. Total No. of emigrants
Total No. of emigrants by sex,
- . Female
- . Male
- . Both sex

Total No. of emigrants by age,
- . Age less than 15 years
- . Age 15 to 24 years
- . Age 25 to 34 years
- . Age 35 to 44 years
- . Age 45 to 54 years
- . Age 55 to 64 years
- . 65 years and over

Total No. of emigrants by age and sex
- Age less than 4 years
  - . Female
  - . Male
  - . Both sex
- Age 5 to 9 years
  - . Female
  - . Male
  - . Both sex
- Age 10 to 14 years
  - . Female
  - . Male
  - . Both sex
- Age 15 to 24 years
  - . Female
  - . Male
  - . Both sex
- Age 25 to 34 years
  - . Female
  - . Male
  - . Both sex
- Age 35 to 44 years
  - . Female
  - . Male
  - . Both sex
- Age 45 to 54 years
  - . Female
  - . Male
  - . Both sex
- Age 55 to 64 years
  - . Female
  - . Male
  - . Both sex
- 65 years and over
  - . Female
  - . Male
  - . Both sex

No. of economically active emigrants by kind of economic activity
- . Agriculture
- . Commerce
- . Industry
- . Others

No. of economically active emigrants by sex
- No. of economically active emigrants employed
  - . Female
  - . Male
  - . Both sex

No. of economically active emigrants unemployed
. Female
. Male
. Both sex
No. of economically active emigrants inactive
. Female
. Male
. Both sex
No. of persons visiting abroad
No. of emigrant refugees
No. of immigrant refugees leaving the country
No. of persons leaving for education
No. of emigrant nomads & others.

C) Total Financing on migration
. Net social costs of migration
. Net social benefits of migration
. Others

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